

Course Syllabus

Course Title: Microcontrollers

Course Code: ATE 1232

Course Delivery: 3-periods (Lab Work) + 1-period (Class Activities)

Course Catalogue Description:

This course provides knowledge of the basic function of microcontrollers by allowing them to design their own customized, intelligent inventions with Parallax, Inc.'s BASIC Stamp microcontroller module. The hands-on activities in this course incorporate a variety of fun and interesting experiments that are designed to appeal to a student's imagination by using motion, light, sound and tactile feedback to introduce new concepts. The activities and project in this course facilitate hands-on presentation of design practices used by engineers and technicians in the creation of modern machines and appliances using common inexpensive parts.

Course Objectives:

Upon the successful completion of this course, students should be able to:

- Define a microcontroller, describe its applications and features.
- Use Parallax Board of Education (BoE) and PBASIC software to build simple microcontroller applications.
- Use a BASIC Stamp to control LED circuits.
- Build and test a pushbutton circuit and use the BASIC Stamp to read the state of one or more pushbuttons.
- Describe the purpose of a 'servo' and use a servo for micro controlled motion.
- State the purpose of a 7-segment display, and explain how to read a pin map.

Course Modules:

Topic	# of Weeks
Module 1: Introduction to Microcontrollers	2
Module 2: Programming, Controlling and Monitoring	3
Module 3: Digital Display	2
Module 4: Motion Control	1
Module 5: Project	1